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Public Health and Medical Services for Migratory
Farm Workers



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Public Health Reports

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A FEDERAL PROGRAM OF PUBLIC HEALTH AND MEDICAL SERVICES FOR MIGRATORY FARM WORKERS¹

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Since the appearance of Steinbeck's *Grapes of Wrath*, the nation has been made generally aware of the social plight of the migratory farm worker. It is somewhat less aware of the specific health problems affecting this group and perhaps least aware of a rather extensive Federal program of health services that has been operating to meet these problems.

While the health needs of this most marginal of occupational groups have always been tremendous, the war has placed a new economic meaning on these needs. For, with the war, American agriculture moved from an economy of vast farm labor surplus to one of relative farm labor shortage. The value of a farm labor man-day accordingly became vastly greater, more than ever to be preserved from the wastage of illness or injury.

Recruitment for the armed forces and the attraction of high industrial wages have not only diminished the available supply of seasonal farm labor, but have naturally withdrawn some of the most robust members of the force. Thus, the seasonal farm labor force is now composed chiefly of aged, very young, and physically unfit men, and an increased proportion of women. Each of these groups tends to have a higher incidence of illness than do able young males. To complicate matters further, the mobility of the remaining workers has been limited. Shortages of rubber, gasoline, and second-hand cars have almost eliminated the all-serving family jalopy as a vehicle to convey farm labor from one area to another.

As a result of all these conditions, the fulfillment of farm production goals has required the Federal Government to supplement local farm labor mobilization with an extensive program of farm labor transportation at Government expense, including the importation of tens

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of thousands of farm workers from foreign countries. The health problems with which Government agencies were formerly faced in relation to migrant farm labor have, therefore, become greatly magnified.

Throughout the course of a year, the total number of persons served by the health program is probably well over 150,000. The number varies with the season, the peak for the country as a whole coming in the summer months, although in certain southern sections a high level of employment is maintained throughout the winter months. The general movement of the seasonal farm labor force is a continuous flow of groups of workers following the crops, supplemented by the dispatch of "shock troops" of the "agricultural army" by rail and bus to save the harvest in areas of acute labor shortage.

To handle the health problems of this group there is established in the War Food Administration, Office of Labor, a Health Services Branch staffed by commissioned officers of the United States Public Health Service and administrative civilian personnel. The latter handle the numerous fiscal, procurement, budgetary, statistical, legal, and related organizational aspects of the program, while the Service officers deal with the professional and technical aspects of the health services. The program operates in nearly all the States, but the field health staff is a mere skeleton; each of the five principal field offices has one medical officer, one or two sanitary engineers, a supervising nurse, and a "business manager." The job is done only through maximum utilization of available health resources and personnel in all areas of operation.

By far the greatest task is to assure the provision of day-to-day preventive and therapeutic medical services to the farm workers and their dependents who come under the jurisdiction of the War Food Administration. When a farm family or farm worker is to be located in an employment area, however, and transportation is provided by the Federal Government, medical selection must play a part in recruitment and medical care must be provided en route.

RECRUITMENT HEALTH MEASURES

Areas of relative farm labor shortage for which interstate labor is ordinarily recruited usually are prosperous sections of intensive farm production, where local health conditions are relatively good. Transportation of several hundreds of workers into these sections from areas of farm labor surplus naturally imposes heavy responsibilities on public health personnel, for sections with surplus farm labor commonly are of low economic status where physical defects and endemic diseases are widespread in the population.

The health task of recruitment, accordingly, is to insure the trans-

portion of farm workers who are free from communicable disease and without illness or physical defect which would make farm work hazardous to themselves or which would render them incompetent as workers. Aside from the public and the personal health implications, a worker who proves incapable of performing strenuous farm work represents a loss in transportation costs, and nearly all farm work for which seasonal labor is required is strenuous.

While recruitment in the United States is handled by the State agricultural extension services, health standards are prescribed by the Federal Government. The policy is to require the performance of a physical examination on every candidate for transportation. Dependents of farm workers must be examined for evidence of communicable disease, if not for physical competence. With the available labor supply widely dispersed over scores of rural counties, particularly in the Southern States, the simple objective of organizing a physical examination becomes quite complex. The most effective system has proved to be the establishment of assembly centers where large groups of workers are examined prior to their entrainment for distant harvest lands. Local physicians, nurses, and clerks, local hospital clinics, and local health departments must be utilized for the work.

Standards of acceptance must necessarily be lenient, for at the bottom of the manpower barrel the "pickings" are few. Potential hernia or enlarged inguinal rings are not ordinarily considered a cause for rejection. Poor teeth, poor vision, and defects of hearing or of speech are generally not disqualifying. Functional cardiac murmurs do not bar recruitment, nor do various orthopedic deformities which are not active pathologic processes and do not seriously impair working ability. Even though strict standards are not required, the home-town doctor, who has known John Jones since he was born, is often loath to stand in the way of John's making "good money" in a distant State, a fact which heightens the preference for the assembly center system of examinations, where the doctor is a stranger.

With respect to communicable disease, however, every effort is made to prevent the interstate transportation of disease. Outside of the grossly apparent exanthemata or active infectious diseases manifested by a fever, the communicable diseases chiefly sought are the venereal infections, tuberculosis, and the typhoid carrier state. All three, of course, are found only on careful examination and practical field conditions often make the fulfillment of desirable policies difficult.

Active venereal lesions or other evidence of recent infection are an immediate cause for rejection. The unavoidable delay incurred in obtaining laboratory reports on serologic tests for syphilis, however, usually requires the acceptance of all persons without clinically evident

syphilis. Serologic reports are forwarded to the place of destination, where treatment may be instituted, if indicated.

The chest is, of course, physically examined for pulmonary tuberculosis but routine X-ray studies are seldom feasible at scattered rural recruitment centers. Occasionally, it has been possible to X-ray a small percentage of candidates, with locally available equipment, selecting for study persons having the faintest suspicion of tuberculosis (including poor nutritional status as an indication). In Texas, however, where the midwestern sugar-beet companies maintain a regular recruitment center, the Michigan State Department of Health each spring has set up a photofluorographic unit to screen out cases of tuberculosis which had been burdening the Michigan sanatoria.

- The detection of typhoid carriers is, of course, even more difficult under the pressure of "grass roots" labor recruitment. The policy, however, is to transport no one giving a history suggestive of typhoid fever, without a stool examination. Malaria, when known, is another ground for rejection.

Smallpox vaccination of all persons is ordinarily required, whether or not they have been successfully vaccinated in the past. Diphtheria immunization (at least a first injection) is considered essential for all children under 15 years of age. A first injection of triple typhoid vaccine is also often given to all recruits before being transported, with arrangements for completion of the course in the area of employment.

The thoroughness of the recruitment health measures depends on numerous variables, particularly the number of workers to be processed and the time at hand in relation to the available medical and related personnel. Train schedules must be met and the exigencies of crop conditions frequently require mobilization of a "battalion" in the land army on hardly a day's notice.

The type of work affects policies and may involve additional medical procedures. A crippled man or a worker weighing 200 pounds, for example, would not be recruited for fruit-picking, where the job is done on a ladder. Dairy workers require negative throat cultures and hands free of dermatitis. The duration of work in the employment area will determine the advisability of performing a serologic test; a stay of fewer than 60 days, for example, would hardly allow time for the test to be completed, the result forwarded ahead, the case located, a diagnosis firmly established, and the case put under treatment before it would be time for the worker to return home and leave the jurisdiction of the War Food Administration. Finally, the immediate urgency of farm labor requirements necessarily influences the medical standards which may be enforced.

In order to keep health departments informed on movements of

farm workers and to enlist their cooperation, particularly in the control of communicable disease, an effort is made to notify State health officials when transportation of workers into their States is anticipated.

FOREIGN RECRUITMENT

Recruitment in foreign countries presents special problems. The Foreign Quarantine Division of the Public Health Service has had to send teams of medical officers with equipment to Mexico and the British West Indies for extended periods of time. The arm of the quarantine stations has thus been extended and the wastage of transporting workers who would later be rejected at the place of entry has been prevented. In each instance, the health department in the country of recruitment has cooperated in the organization and performance of the examinations.

In the West Indies, recruitment has been carried on in Jamaica, the Bahamas, and Barbados. Physical examinations have been thorough. Practically all West Indian workers have been vaccinated for smallpox and given an initial typhoid vaccine injection. With the limited facilities on the islands, however, chest X-rays and serologic tests for syphilis have, in general, had to be postponed until arrival in this country. More recently, it has been possible to set up laboratory facilities in Jamaica so that Kahn tests could be performed before transportation of the workers.

In Mexico, where about 75,000 farm workers are recruited during the year, the examinations have been organized on a particularly efficient, assembly-line basis. They have included a miniature chest X-ray (performed by officers of the United States Public Health Service Tuberculosis Control Division) and a smallpox vaccination. Local laboratory facilities did not permit the performance of serologic tests for syphilis in all cases, but recently arrangements have been made through the Pan American Sanitary Bureau for the establishment of a laboratory in Mexico City. Thus the serologic status of every Mexican importee may henceforth be known in advance and will not have to await testing at numerous points of placement in the Western and Midwestern States.

In Newfoundland, where 1,200 dairy workers have been recruited, examinations have been performed by medical officers of the United States Army, through an agreement with the Public Health Service. In the special effort to prevent milk-borne disease, chest X-rays for tuberculosis and throat cultures for diphtheria have been performed, in addition to blood tests and thorough physical examinations. Persons with evidence of chronic infection of the respiratory tract have been eliminated. Precautions were taken, of course, to eliminate typhoid carriers.

The percentage of rejections among those examined in the West Indies has been averaging about 30 percent and in Mexico about 8 percent. The relatively low percentage of rejections in Mexico is probably due largely to the fact that a degree of over-all selection is made by lay officials before a candidate is allowed to reach the medical examination. Moreover, a considerable percentage of Mexican workers, provisionally rejected for dental caries and for pediculosis, are subsequently rehabilitated by extractions and delousing so that they may be admitted. As a final precaution against importing louse-borne disease, the highly effective insecticide, DDT powder, obtained through the Public Health Service, is being used to spray the workers before they board the train in Mexico City. Tropical diseases have not played an appreciable part among causes for rejection. With regard to pulmonary tuberculosis, it is of interest that among the Mexicans examined by X-ray this season, less than 1 percent showed active pulmonary tuberculosis, a fact which may be attributed partially to the preliminary screening mentioned above. West Indians similarly examined after arrival in this country have shown a comparable prevalence of the disease, perhaps indicating the effectiveness of the physical examination on the islands.

EN ROUTE HEALTH SERVICES

Thousands of farm workers transported by the War Food Administration experience their first ride on a train. It is a difficult experience. Crowded rides in day coaches for 24, 48, or 72 hours create numerous problems.

It has been found invaluable to have a public health nurse accompany trainloads of 100 persons or more, particularly when women and children are along. The commonest problems are malaise associated with insomnia, headache, and constipation, foreign bodies in the eye, minor cuts and bruises, and upper respiratory tract infections. On a few trips, the latter have proved so extensive that large numbers of workers have been incapacitated for several days after arrival in the area of employment and several cases of pneumonia have developed. To combat this, it has been deemed best to reject candidates for transportation who may have even slight respiratory infections, in order to avoid the rapid spread of the infection through crowded trainloads of workers.

As an aid in coping with these problems, the nurse, acting under standing orders, is provided with a supply of drugs (usually including aspirin, a simple sedative, and a mild laxative) and first-aid equipment. If anything serious develops, she is authorized to wire ahead to arrange for the services of a physician or hospitalization at the next station stop.

When the trips are long, a valuable opportunity is provided for the nurse to give some simple health education, particularly in personal hygiene. The washroom on a long, dull train ride becomes a focal point of interest and provides a basis for instruction in the rudiments of hand washing after use of the toilet and before eating, as well as in the proper maintenance of sanitary facilities. An opportunity is also afforded for informing the transportees about the medical services available to them in the area of employment.

HEALTH SERVICES IN THE AREA OF EMPLOYMENT—ADMINISTRATIVE PRINCIPLES

An explanation of the system for providing medical services to farm workers in areas of employment requires a brief consideration of the background of the program. In 1937, when the Farm Security Administration undertook to improve the plight of the migrant farm worker, as a phase of its general program of rehabilitation of low-income farm families, it came face to face with the problem of medical care (1).

The voluntary, contributory, local health insurance plans among low-income farmers (Farm Security Administration borrowers) had been gradually extending throughout the country. Here was an economic group, however, too depressed to be expected to give any contribution. Outright public assistance was necessary if they were to receive any medical services.

The individual States quite reasonably felt that this problem was not all theirs. While certain public funds were available for medical assistance to indigent families, the migrants were not State residents and were therefore often barred from welfare assistance by State laws. Clearly the National Government had to help (2).

A complex problem was faced. How could Federal financial assistance for medical services be provided within the framework of current legislative authorization and contemporary professional attitudes toward the role of government in medical service? The solution was one utilized by other programs in agriculture, such as the extension of credit to farm operators. A nonprofit corporation was established, subsidized by the Federal Government, for a specific purpose. In this instance the purpose was to provide health services to the farm worker families for whom the Federal Government assumed responsibility. The first of these corporations was the Agricultural Workers Health and Medical Association organized in the spring of 1938 to operate in California and Arizona, chief area of concentration of out-of-State seasonal farm labor in the United States. The program has, in answer to felt needs, gradually extended so that one or another of six Agri-

cultural Workers Health Associations now covers every State in the nation.

The corporation charters of these associations grant them the right to engage the services of physicians and dentists, purchase drugs and equipment, negotiate with hospitals, employ nurses and clerical personnel, and carry on other activities necessary to provide health services to eligible farm workers (3).

The early definition of eligibility for health services required, in addition to employment in agriculture, (a) low-income status and (b) nonresidency, and hence ineligibility for local welfare medical assistance. Under this definition, almost the entire migratory farm worker population was eligible for service. More recently, the test has involved chiefly being under the jurisdiction of the War Food Administration, that is, being transported across State or National lines by the War Food Administration or residing in a Federal farm labor supply center or camp. This test may or may not imply either of the previous criteria. While in an economic sense this implies a broader basis for eligibility (eliminating income restrictions), actually large numbers of workers and their dependents not under War Food Administration jurisdiction have in a sense been discriminated against. In the farm labor supply legislation of 1944, however, provision is made for coverage of migratory farm worker families not under War Food Administration jurisdiction if they are employed in an area accessible to a farm labor supply center. The Congress has thereby indicated its recognition of medical care as a measure for preserving wartime farm labor manpower. International agreements for the importation of farm labor, moreover, require that medical care be provided to foreign nationals.

With the Agricultural Workers Health Association mechanism, great latitude was possible in the engagement of part-time local physicians and dentists or payment of local hospital bills or purchases of drugs, without the relatively complex and time-consuming process of clearing through Government personnel and purchasing offices. Physicians' bills could be paid promptly and practitioners were dealing with a local association rather than an impersonal Washington bureau—important factors in winning professional cooperation.

To insure a true representation of local interests, the Board of Directors of each Agricultural Workers Health Association is composed generally of seven members, of whom only three represent government, while the remainder are representatives of professional groups, State public health authorities, and agricultural interests, or simply public-spirited individuals. A full-time business manager and auxiliary clerical personnel are engaged to operate the business

affairs of the Agricultural Workers Health Association, and the field medical officer of the War Food Administration, Office of Labor, acts as medical advisor or medical director.

MEDICAL AND NURSING SERVICES

As stated, professional and institutional services are rendered almost entirely through local resources. Early in the program, practically all physicians' and dentists' services were rendered through referral of patients to private offices, with payment being made on a fee-for-service basis. Fee schedules were developed by the Board of Directors in cooperation with the professional societies. The efficiency and economy of a clinic form of operation, however, with physicians and dentists paid on a per-hour basis, gradually became recognized.

In order to make the most judicious use of physicians' services and to provide a continuous program of preventive services, the characteristic pattern evolved has been the establishment of clinics or "health centers" in the charge of a registered nurse, usually full-time but occasionally part-time. Local physicians serving on a panel rotate in attending the clinic two or three or more times a week at designated hours.

In the course of a year such health centers or clinics are set up in about 250 key areas of seasonal labor concentration throughout the country. Most of them are associated with farm labor supply centers or camps which, while developed by the Farm Security Administration to house and provide community life to the Joabs of America, are now being operated through the War Food Administration, Office of Labor. Some clinics have been organized, however, not associated with such centers, but located on the property of large growers, in local health departments, or at some point easily reached by a large number of scattered workers.

Since agricultural work is highly seasonal and the stream of migration moves on from month to month, many of the clinics, too, must be mobile. Accordingly, much use has been made of specially constructed medical trailers, which can be towed on to the next location on an hour's notice. Health personnel, particularly nurses, also must be "mobile" and may be transferred from area to area along with the workers. Furthermore, in the off season for a health association in the North, an entire group of health personnel may be transferred to a southern association, where the harvest is at its height.

Each health center or trailer carries a full supply of necessary drugs, which have been purchased in quantity by the Agricultural Workers Health Association, for dispensation directly to the farm workers,

without charge. Any drugs not in the inventory may be prescribed by a local practitioner and obtained in a local pharmacy.

The nurse is the keystone of the preventive as well as the therapeutic medical care program (4). When an eligible farm worker or his dependent comes to the health center with a complaint, the nurse decides on the basis of his symptoms whether or not he needs immediate medical attention. If he does, she refers him at once to a local physician on the panel of practitioners who have agreed to participate. Otherwise, the nurse gives immediate palliative treatment, based upon standing orders approved by the local clinic physician, and usually advises the patient to return at the next regular clinic hour. On this basis, it has been found that about 50 percent of all initial applicants for care can be screened out by the nurse, obviating the need for referral.

For special services, such as surgical care, visual refractions, or the application of orthopedic appliances, patients may be referred to outside resources. The same applies to consultant services for any case presenting complex diagnostic or therapeutic problems.

In some areas, particularly in the Midwest and Great Plains, seasonal farm labor is so thinly dispersed that it is generally impractical to establish fixed clinics. Here "roving" nurses are engaged to visit the small groups of farm workers on scattered farms and render such preventive and educational services as they can. All medical and dental services are then rendered on a referral basis, with the nurse, the farm labor supervisor, the local health officer, or the employer acting as the authorizing agent.

A physician accepting a referred patient submits his bill for services rendered, along with the proper "authorization" for service, to the central office of the Agricultural Workers Health Association. These bills are then promptly paid in accordance with the fee schedule agreed upon. An analogous method is used in paying for hospitalization, dental care, drugs, and appliances.

With the wartime shortage of practitioners, the panel system of rotating physicians for clinic service has not been feasible in a number of areas and one physician may be engaged on a half-time or quarter-time basis to serve several clinics. In some areas, local health officers serve as medical-clinic physicians. In one area in southern Idaho and another in Washington, where the shortage of local physicians was especially critical, it was found necessary to detail a full-time medical officer from the United States Public Health Service to conduct a group of medical clinics. This was done with the full approval of local professional groups.

HOSPITALIZATION

Cases requiring hospitalization are referred to local hospitals with which prior arrangements have been made by the Agricultural Workers Health Association. Because of the generally meager living conditions of the farm workers, an unusually high proportion of cases require hospitalization. This is particularly true of single male workers for whom even simple bed rest at home is impractical since there is no one at hand to care for them. Furthermore, hospital costs often tend to be high, because in areas where ward accommodations are not available to Negroes or Latin-Americans, it is necessary to engage private rooms for such persons.

To cope with some of these problems, infirmaries have been established in a few sections, chiefly for the bed care of convalescents or cases with minor ailments. Other small infirmaries have been set up for the isolation of cases of communicable disease.

At 2 points in the country, where seasonal labor concentration was great and where local hospital facilities were particularly lacking, hospitals were constructed especially for eligible farm workers and their families. These are at Belle Glade, Fla., and at Eleven Mile Corner, Ariz., the institutions being operated by the respective Agricultural Workers Health Associations in these regions. Each hospital has about 60 beds and is well provided with modern medical equipment, far better than in the average rural hospital. In the Florida institution, all medical and surgical services are rendered by a resident staff of 2 Public Health Service officers, while in Arizona services have been rendered by attending private practitioners. Quite recently, because of low occupancy (associated with a changed farm-labor distribution in the area), steps have been taken to make the Arizona institution temporarily available to meet other health needs.

DENTAL SERVICES

In order to assure even partially adequate dental services, the assignment of full-time personnel has been necessary more often than for the provision of medical services. Thus, while local private dentists are utilized generally for dental care on a clinic or referral basis, in several sections, including California, the Pacific Northwest, Texas, Florida, and Connecticut, full-time dentists are engaged by the respective Agricultural Workers Health Associations. Two of these are Public Health Service officers. All of these men work in dental trailers or with portable equipment, moving from camp to camp at intervals through the year or sometimes serving several camps in one area in rotation.

In areas where family units predominate, rather than single workers,

there is emphasis on preventive dental care for children. The dental services rendered adults are necessarily limited, being confined largely to extractions, fillings, and prophylaxes. Artificial dentures may be supplied when essential to the general health of the individual, provided that, if he can, the worker pays part of the cost.

PREVENTIVE SERVICES

With regard to preventive or other services rendered customarily by departments of public health, the policy is to seek the advice and assistance of State departments of health and the district offices of the Public Health Service. The services of State and local health agencies are used to the extent that cooperation is forthcoming (5). If a maternal health program is conducted in a county, for example, the local health department is invited to conduct a prenatal clinic at the Agricultural Workers Health Association health center in order to reach the farm worker families. If the number of pregnant women is small, they may be asked to attend a regular clinic conducted elsewhere by the county health department.

The question of integration of the War Food Administration program with that of local health agencies arises most often with regard to venereal disease control. The farm worker population is recruited largely from socioeconomic groups in which venereal infection is generally high. The detection and treatment of syphilis is, therefore, a major problem in nearly all local areas. In a few places, such as New Jersey and Florida, local or State health authorities have assigned official venereal disease control personnel to work among the farm workers full-time or part-time. In the Lake Okeechobee area of Florida, a Public Health Service officer has been assigned to supervise venereal disease control services to the general local population, as well as the migrants. This is the only effective method of controlling the problem among the migrants.

In many places, established venereal disease clinics are, of course, open to the farm workers. The commonest practice, however, is for venereal disease clinics to be conducted at weekly intervals at the Agricultural Workers Health Association health center, either separately or in conjunction with one of the regular medical care clinics. Rapid treatment centers of the Public Health Service and State or local health agencies have been made available to migratory farm workers.

With whatever assistance local departments of health may extend, every effort is made to conduct a systematic program of preventive services. On entering a farm labor camp, the farm worker and his

dependents usually receive a general physical examination, including a serologic test for syphilis, if this has not been previously performed. Mass surveys with miniature photofluorographic studies of the chest have been done on certain groups. Blood smears for malaria have been done occasionally on workers coming from the West Indies.

All adults are generally immunized against the typhoid-paratyphoid group of diseases and vaccinated against smallpox if this has not been done during recruitment. In addition to these immunizations children receive diphtheria toxoid. In the Northwest, Rocky Mountain spotted fever immunization is given in the tick regions. For Mexican nationals, a course of injections started in Mexico City is completed. In parts of California, protection has been given against equine encephalomyelitis.

The usual public health program of child hygiene and maternal care is carried on. Women farm workers, whose total maternity experience had been frequently limited to service from untrained midwives, are delivered by physicians in hospitals. In the Texas program, a modern delivery room is part of every health center. In some centers, on the request of the local Camp Council, contraceptive advice has been given, when medically warranted, as part of the maternal health program. In many of the farm labor centers, nursery schools, operated to free the women for essential farm work, are given health supervision.

Every effort is made to carry on a continuous program of health education. Literature and posters are obtained from local official and voluntary agencies and talks on relevant health problems are given. The Camp Council, an organization representing the farm workers themselves, frequently participates in health education activities. Since large sections of the farm labor population in the Southwest and Pacific coast areas are Mexican nationals or Spanish-Americans, this material must often be presented in Spanish.

Classes are frequently organized in first aid or home nursing in those areas where entire families are at hand. For teen-age girls, effective classes in personal hygiene and sex education have been developed, starting with subjects of popular interest like beauty culture and adolescent problems, and gradually branching out.

In farm labor supply centers where only males are housed, a program of mass feeding has usually been conducted. This has provided an opportunity for nutritional education and for the provision of a balanced diet, although considerable resourcefulness is necessary to adjust the meals to national food habits. Food handlers are routinely examined, particularly for enteric diseases, and kitchen sanitation receives considerable attention.

REFERRAL OF MEDICAL RECORDS

With the high mobility of the farm workers, special importance attaches to the proper referral of records from area to area. The policy is for the complete medical record to follow the worker. These referrals are particularly important in order to assure the proper continuous treatment of cases of syphilis.

During the harvest season, if a foreign worker must be repatriated because of sickness, a report on the medical cause for repatriation is submitted to the national health agency of the nation involved. Furthermore, at the end of the season records on all routinely repatriated workers needing further treatment, particularly for syphilis, are referred to the national health agencies.

ENVIRONMENTAL SANITATION AND SAFETY SERVICES

The sanitary engineering staff attached to the War Food Administration is confronted with numerous problems of environmental sanitation. Of the centers operated under the program, about 50 are the so-called standard or permanent type, but the majority are mobile, or temporary. In the permanent centers, the sanitary facilities are on a well-constructed community basis. The water supply is generally from drilled wells or from a nearby municipal system and is distributed under pressure to various buildings in the camp. A water-carriage sewage-disposal system is always provided, with connections to town sewers or to a sewage-treatment unit.

The use of mobile camps entails a recurring problem of site selection to assure proper sanitation. The policy is to have any new site approved by the State department of health. In the mobile units, the frequent assemblage and dismantling of all living quarters has generally necessitated the use of drilled wells with yard hydrants for the water supply and the use of outdoor pit privies for excreta disposal. Achievement of proper kitchen sanitation and garbage disposal in meagerly constructed facilities is always difficult. Numerous problems of maintenance must, therefore, be faced jointly by the sanitary engineers, who make periodic inspections and recommendations, and by the center manager, the field nurses, and sometimes the Camp Council.

The task of maintaining decent environmental sanitation for certain farm workers under War Food Administration jurisdiction, housed on the premises of private growers, is far greater. International agreements with foreign nations supplying the United States with farm labor stipulate certain minimum standards of housing and sanitation for their nationals. The War Food Administration, however, lacks a staff of sanitary engineers even remotely adequate

to inspect all the growers' premises involved. In order to fulfill legal requirements, therefore, the War Food Administration has developed sets of sanitation standards in cooperation with a number of State departments of health. The housing and sanitation provided by a grower must be approved, on the basis of these standards, by State or local health personnel or Office of Labor field supervisors before the foreign workers are finally placed. Today all official health agencies are, of course, desperately short of sanitation personnel, but the cooperation that has been extended in this work has been invaluable.

Finally, to help cope with the huge problem of farm injuries, a safety engineer is devoting full time to promoting the elimination of fire and accident hazards and to supervising fire-fighting equipment in all of the farm labor supply centers. Education on safe practices on the farm and in the center is being continually furnished.

THE MAJOR CAUSES OF MORBIDITY

As among industrial workers, the illness of highest incidence in this farm-worker population is respiratory disease. The conditions under which seasonal farm workers live predispose them to an excessive amount of respiratory infection which, without being treated by rest because of the sacrifice in wages which would be incurred, often becomes chronic. A persistent pharyngitis is a common finding on examination of this group. On growers' premises, close living quarters, frequently with poor ventilation, make for ready spread of infection, and meager bedding—often mats of straw directly upon the damp ground—further reduces resistance. The movement of workers, moreover, from the subtropical West Indies to northern climates, to which they are not accustomed, naturally creates special respiratory disease hazards.

Gastrointestinal disorders tend to show the next highest incidence. A large share of these is undoubtedly related to the difficulties in decent preparation of food for the migrant worker. The noonday meal eaten in the field particularly entails many hazards. The food often must be prepared the night before or early in the morning and refrigeration between the time work starts and the lunch hour is often impossible. Matters are made worse by the frequent use of sandwich spreads of meat or vegetable pastes (made from left-over foods), which provide an excellent medium for staphylococcal growth. It should be no occasion for surprise that in the last year there were half a dozen rather severe outbreaks of gastroenteritis, affecting groups of 90 to 300 workers, and due probably in all instances to staphylococcal toxins. All but 1 outbreak were in the camps of private growers. Control measures to

prevent recurrences are being strongly urged but it is difficult to influence the feeding practices on the farms of thousands of scattered growers. Aside from bacterial poisoning, the lack of organized messes in many places often necessitates the workers feeding themselves, with dietary indiscretions often leading to gastrointestinal disorders.

There is a vast number of complaints of constipation among farm workers and their families and a great demand for laxatives. It may be that this personal and noncommunicable ailment is a matter amenable to public health control in that it is possibly related to poor development of bowel habits incident to the inconvenience of using outdoor toilets. Decent indoor water closets for rural people might correct this problem.

Dental disease is a major problem, farm workers having usually suffered from total lack of previous dental care. Decay is often so advanced that imbedded residual tooth roots, requiring surgical removal, are commonplace. The excessively high carbohydrate diet of these low-income groups has been considered by many a contributory cause of this advanced dental decay.

COMMUNICABLE DISEASES

The problem of venereal diseases is particularly great among those groups of farm workers who are unattached to families, chiefly foreign nationals. With discrimination exerted against these groups in many communities, the usual facilities for recreation are often not available and resort to sexual outlets is inevitable. In a few places, persons engaged in organized prostitution rackets have been discovered soliciting the farm workers at Government centers. Cooperation with law-enforcement authorities aimed at repression and efforts at providing organized recreation have been put forth to meet the problem. Prophylactic materials are being dispensed and arrangements have been made for farm workers to utilize military prophylactic stations, when they are at hand.

A great deal of indignation has been forthcoming from certain communities concerning the introduction of tropical diseases by farm workers imported from Jamaica, the Bahama Islands, and Mexico. Experience provides little ground for such fears. At recruitment centers these workers receive thorough medical examinations, as previously described. Furthermore, in this country, they are probably under closer surveillance than any other group in the Nation's long history of immigration of labor from the outside world.

Tropical diseases have been rare, although malaria has been found occasionally among Mexicans and West Indians. Where it has been discovered, State or local health authorities have been notified and

invited to make entomological studies for vectors and to apply the usual control measures when necessary.

The tropical disease of chief interest among the West Indians has been yaws, of importance mainly because of its confusion with syphilis when the diagnosis must rest, in the absence of lesions, on the serologic test alone. Since the disease may be treated in substantially the same way as syphilis, it has not presented any practical difficulties.

Recruitment officials in Mexico have been advised against recruiting in those areas in which leishmaniasis, onchocerciasis, or other tropical diseases are endemic. Special precautions are being taken to detect and eliminate any such cases.

Aside from scattered outbreaks of mumps and measles, chiefly affecting adults from the West Indies with little or no previous contact with these diseases, no serious epidemics of communicable disease have been reported among the farm worker population. In the last year, however, meningococcal meningitis has increased in incidence, in accordance with the national picture. Cases of typhoid fever have occurred rarely, but outbreaks have been avoided.

OCCUPATIONAL DISEASES OF FARM WORKERS

The chief occupational hazards of the farm worker population are muscle strain, heat exhaustion and sunstroke, rhus dermatitis, and accidents in connection with farm machinery. All of these tend to occur most frequently early in the work season, when the workers are not yet adjusted to the difficulties of field labor. Many of the workers are quite unaccustomed to the use of the muscles involved in picking crops, particularly root products or other low-growing vegetables, so that low-back pains and leg soreness are common. While toxic effects from poisonous plant sprays are, of course, possible, none has been specifically encountered.

Finally, it should be pointed out that the medical care problems of this program are not confined to the commonplace ailments of special public health significance. All of the diagnostic and therapeutic problems of any active clinical service are presented. Carcinomas, heart disease, neurological disorders, rare dermatoses, and blood dyscrasias are all encountered. When difficult clinical problems are met by local physicians, consultation with the best men available locally is freely encouraged.

VOLUME OF MEDICAL SERVICES

Because of a general poverty of medical attention in the past, the farm-worker family carries a high complement of uncorrected physical defects such as infected tonsils, chronic bronchitis, middle-ear infec-

tions, recurrent appendicitis, orthopedic defects, varicose veins, hemorrhoids, and pelvic disorders in women. Malnutrition and secondary anemia are common.

As a result, and because of the conditions of migrant living, there is a high rate of applications for medical service compared to the experience of the general rural population. While the computation of specific rates is difficult without an accurate population base,⁴ it is estimated that of those eligible about 1 out of 10 seeks medical service for a case of illness each month. There have been about 3.5 visits to a physician or nurse per case of illness, of which about 40 percent have been services of physicians and 60 percent services of nurses. This represents an incidence of about 4,200 physician's or nurse's services per 1,000 persons per year, of which about 2,500 are nurse's services and about 1,700 are physician's services. The volume of service naturally varies markedly with the accessibility of a clinic to the workers, the presence of women and children, and other factors. The removal of the economic barrier to the receipt of services undoubtedly increases to some extent the utilization of the services offered. As these indigent workers become conditioned in medical experience, their rate of application for service tends to increase. While some complaints probably reflect the hypochondriasis found among any population group—indicative of deeper mental problems or homesickness among foreign workers—the great bulk of these complaints are caused by specific disease processes.

The effectiveness of the volume of services delivered may be partially reflected by data available on sickness absenteeism among farm workers under Office of Labor jurisdiction. It appears that, in the country as a whole, an average of only 1.5 percent of total available man-days of labor are lost due to sickness. While comparative data for other farm workers are not available, the national average for industrial workers is about 3.7 percent (6). The difference may be partially explained by the fact that seasonal farm work is chiefly a warm-weather operation, when illness rates are lower, by the relatively smaller proportion of women workers among whom sickness rates tend to be higher, and by the medical selection of this group of farm workers before they start work. To the early and continuous provision of medical services, however, and the entire preventive program, may be attributed part of the credit for the good record.

COSTS OF THE PROGRAM

The total operating medical cost of the program approximates \$2,000,000 a year. This does not include the initial costs of most of

⁴ Because migrants in the area surrounding a farm labor supply center may at any time apply for service, it is quite difficult to estimate accurately the total number of persons eligible for the service of a particular clinic.

the physical facilities (offices, clinics, trailers, hospitals, etc.) which have been assumed as obligations of the general farm labor, rather than the medical, program. Since the actual population served cannot be accurately determined, and since the composition of this population changes from month to month (continuously introducing new individuals with backlogs of untreated illness or defects), it is extremely difficult to estimate the final cost per person served. The closest estimate one may hazard is between \$18 and \$24 a year per person served, or, more accurately, in terms of the seasonality of farm work, between \$1.50 and \$2 per person per month.

The vast bulk of this expenditure goes for the payment of direct medical, surgical, specialist, nursing, dental, hospital, or related services. Only a small percentage is referable to the cost of administration or of the supervision rendered by technical, medical, or sanitary engineering personnel. Nearly all the funds are disbursed by the Federal Government to the Agricultural Workers Health Associations, in accordance with the volume of services rendered, and are spent directly by these associations. Under certain circumstances, some domestic-worker beneficiaries have made small contributions toward the cost of the program, either as "membership fees" or as partial payment for hospitalization, but the percentage of cost thus sustained has been negligible.

The pattern of medical practice reflected in the relative proportion of services provided on a referral in comparison with a clinic basis differs, of course, in different parts of the country. It is not surprising that where services are rendered predominantly on a clinic rather than a referral basis, the cost per service or the cost per person served tends to be somewhat lower.

CONCLUSIONS

The significance of the farm labor health program of the War Food Administration, in its relation to the general field of health services in the United States, is that it represents a Federally supported system of services rendered to a medically needy, yet economically essential, social group, combining public health or preventive with therapeutic medical and related services. While financial support is out of Federal tax funds, the actual provision of services is predominantly through local personnel and facilities.

The mechanism of payment for services has been the establishment of regional nonprofit corporations which, in the current setting of American medicine, enjoy fiscal, legal, and public relations advantages in getting a job done quickly and effectively. The mechanism for actual provision of services has been built chiefly around the establishment of health centers or clinics staffed by full-time or part-time

nurses and attended ordinarily by part-time local private practitioners. Relatively wide responsibility is vested in the nurse in the promotion of preventive measures, the handling of minor ailments, and the proper referral to physicians of cases of illness.

The development and administration of this relatively extensive public health and medical care program by the Federal Government is in contrast to the usual promotion of such services in this country on a State basis, either autonomously or through Federal grants-in-aid. The reason, however, is much like that which justified, in the birth of the United States Public Health Service, the Federal assumption of responsibility for the hospital care of merchant seamen. These were people without homes and without a State, who nevertheless were economically essential to all the States. Only the Federal Government could act.

The question arises, however, of some partial assumption of responsibility by the States or by the growers and employers of seasonal farm labor. The in-migration of large groups of seasonal workers is essential to the farm economy of the States involved and to the production and profits of the individual growers. It would seem reasonable, therefore, to look to these sources for partial financial support for this type of program, precisely as general public health services or industrial medical services are supported now by the States or by private enterprise, respectively. With such support, this essential work could be greatly expanded.

As a matter of fact, State and local public health agencies in many areas have contributed personnel and facilities to the program, as a legitimate financial responsibility of their own. Furthermore, the very functioning of the program has served to awaken the interest of many local health agencies to the entire problem of farm labor health needs. One midwestern farmer utilizing Jamaican farm labor remarked: "Now that the Government is bringing me workers, the health department is suddenly getting interested in my place. It's the first time they've looked at my well in 50 years!" Unfortunately, there have been instances where local health agencies have shirked responsibility on the grounds that the "whole matter is being handled by the Federal Government."

Beyond this, the farm labor health program of the War Food Administration is demonstrating how there can be unity of preventive and therapeutic services under single administrative management. The successful relations enjoyed with professional groups, when such operations are actually put into effect, give valuable insight into some of the major questions of the day on the administration of health services.

Viewed against the perspective of total rural health needs, admit-

tedly only the surface of the problem has been scratched. Wide sections of our farm labor population still go virtually without any health services at all. Nevertheless, the program has provided a great volume of needed services to migratory workers, and important demonstration purposes have been served. There is much evidence that farm labor migration, brought to our special attention by the depression and the war, will be a normal phenomenon in our national economy for many years. It is clear, therefore, that the continued expansion of this type of health program is necessary to the promotion of maximum efficiency in the war and post-war production of food and fibre.

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DEATHS DURING WEEK ENDED FEBRUARY 3, 1945

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Feb. 3, 1945	Correspond- ing week, 1944
Data for 93 large cities of the United States:		
Total deaths	10,069	9,629
Average for 3 prior years	9,600	
Total deaths, first 5 weeks of year	49,157	55,293
Deaths under 1 year of age	602	659
Average for 3 prior years	634	
Deaths under 1 year of age, first 5 weeks of year	3,135	3,293
Data from industrial insurance companies:		
Policies in force	66,954,744	66,262,379
Number of death claims	15,946	14,931
Death claims per 1,000 policies in force, annual rate	12.4	11.8
Death claims per 1,000 policies, first 5 weeks of year, annual rate	10.7	12.5

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED FEBRUARY 10, 1945

Summary

The incidence of poliomyelitis increased for the third successive week and continues somewhat high for this time of year. For the current week 52 cases were reported (19 in New York State), as compared with 47 last week, 18 for the corresponding week of 1944, and a 5-year (1940-44) median of 21 cases. A total of 246 cases has been reported to date (60 in New York State), a larger number than for the corresponding period of any year since 1931. The total for the same period last year was 159, and the 5-year median for the period is 186. To date 15 cases have been reported in the New England area, as compared with 5 last year, and 39 cases in the three Pacific States as compared with 51 last year and 41 for the same period in 1943.

The incidence of meningococcus meningitis continues high, although below that of the past 2 epidemic years. The total of 244 cases for the week is only slightly more than half the average for the past 2 years, but is more than for any other corresponding week since 1930. The peak of incidence of this disease is usually reached before the end of March. The total cases reported to date is 1,412, as compared with 2,058 and 3,406, respectively, for the corresponding periods of 1943 and 1944, and a 5-year median of 332.

Of the total of 79 cases of undulant fever reported by 24 States for the week, as compared with 35 for the corresponding week last year and a 3-year average of 29, New York reported 7, Wisconsin 10, Texas 12, and Oregon 13. The total to date is 433, as compared with 219 for the corresponding period last year and a 3-year average of 182.

A total of 5,632 cases of scarlet fever was reported, as compared with 5,803 for the corresponding week last year and a 5-year median of 3,823. The cumulative total is 30,035, as compared with 28,234 for the same period last year, which was the largest number for the corresponding period of any year since 1939.

One case of psittacosis was reported during the current week in Lawrenceville, Ill.

Deaths registered in 92 large cities of the United States totaled 9,916 for the week, as compared with 10,050 last week, a 3-year (1942-44) average of 9,486, and 9,944 for the corresponding week last year. The cumulative total is 58,972, as compared with 64,598 for the same period last year.

Telegraphic morbidity reports from State health officers for the week ended February 10, 1945, and comparison with corresponding week of 1944, and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria		Influenza		Measles		Meningitis, meningococcus						
	Week ended—		Week ended—		Week ended—		Week ended—						
	Feb. 10, 1945	Feb. 12, 1944	Median 1940-44	Feb. 10, 1945	Feb. 12, 1944	Median 1940-44	Feb. 10, 1945	Feb. 12, 1944	Median 1940-44				
NEW ENGLAND													
Maine	2	1	0			5	240	209	1	5	3		
New Hampshire	0	0	0			5	1	8	0	6	1		
Vermont	0	0	0	2	32	1	2	75	10	0	0		
Massachusetts	7	10	3			45	415	430	7	9	1		
Rhode Island	0	0	0	75	28	2	10	375	82	0	3		
Connecticut	0	2	0	2	9	8	39	207	177	6	8		
MIDDLE ATLANTIC													
New York	12	9	14	1	14	1	19	161	1,621	1,272	26	57	4
New Jersey	5	2	6	5	20	22	38	1,277	733	9	28	2	
Pennsylvania	9	9	14	3	12		51	2,038	2,038	10	37	7	
EAST NORTH CENTRAL													
Ohio	8	9	13	6	38	22	23	4,144	222	16	27	2	
Indiana	5	2	10	8	27	44	14	240	183	1	9	2	
Illinois	1	13	15	5	44	44	72	799	323	13	39	1	
Michigan	9	4	3	5	7	7	21	1,410	251	7	33	1	
Wisconsin	1	1	1	30	369	77	38	1,456	585	3	5	1	
WEST NORTH CENTRAL													
Minnesota	9	4	3		3	1	3	1,107	350	1	4	2	
Iowa	2	4	3		52	25	29	570	114	0	2	0	
Missouri	7	6	6		7	7	4	158	85	6	17	3	
North Dakota	2	0	0		24	32	0	158	13	1	0	0	
South Dakota	5	0	1		8	4	15	73	18	0	1	0	
Nebraska	2	1	1	1	9	2	16	11	31	1	2	0	
Kansas	3	5	5	2	2	14	18	268	268	0	5	3	
SOUTH ATLANTIC													
Delaware	0	1	1				23	22	16	1	0	0	
Maryland	10	1	5	23	95	95	46	516	61	3	7	2	
District of Columbia	0	0	0	3	3	3	6	72	19	1	2	1	
Virginia	9	8	8	532	1,421	1,421	36	571	173	10	13	2	
West Virginia	5	3	5	28	88	88	16	380	134	5	0	0	
North Carolina	10	9	15		33	36	9	850	182	5	11	2	
South Carolina	5	5	5	897	1,109	1,109	19	236	47	7	13	2	
Georgia	8	3	7	51	267	267	16	357	202	2	7	2	
Florida	4	5	4	1	40	40	29	86	41	6	18	0	
EAST SOUTH CENTRAL													
Kentucky	9	10	10	2	545	86	2	47	48	5	13	3	
Tennessee	8	7	7	58	366	366	25	350	96	12	28	3	
Alabama	5	11	5	178	448	536	12	446	198	8	17	4	
Mississippi	9	2	3							4	24	3	
WEST SOUTH CENTRAL													
Arkansas	11	7	8	205	397	397	27	113	113	8	9	1	
Louisiana	11	13	8	4	73	73	35	41	41	1	17	2	
Oklahoma	2	1	8	199	358	358	37	57	57	3	4	1	
Texas	84	40	40	2,161	3,403	2,545	150	649	518	18	24	3	
MOUNTAIN													
Montana	0	0	2	24	59	51	6	121	96	0	1	0	
Idaho	0	0	0		14	2	3	10	37	0	1	1	
Wyoming	0	0	0		18	53	6	56	56	0	2	1	
Colorado	3	6	9	12	134	55	16	380	128	1	0	0	
New Mexico	8	1	1		1	5	4	36	36	2	1	0	
Arizona	2	6	2	110	366	281	0	191	80	0	0	0	
Utah	1	0	0	2	482	125	54	18	44	0	2	1	
Nevada	0	0	0		7	0	6	4	4	0	0	0	
PACIFIC													
Washington	8	3	2		19	19	72	153	7	3	0		
Oregon	10	3	2	10	67	54	60	112	247	2	3	0	
California	25	22	22	25	230	230	556	703	433	25	44	4	
Total	336	249	305	4,672	10,748	10,748	1,880	23,220	14,062	244	562	46	
6 weeks	2,050	1,564	1,919	26,109	287,641	82,180	8,816	91,719	64,741	1,412	3,406	332	

¹ New York City only.

* Period ended earlier than Saturday.

Telegraphic morbidity reports from State health officers for the week ended February 10, 1945, and comparison with corresponding week of 1944, and 5-year median—Continued

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever ¹		
	Week ended—		Median 1940-44	Week ended—		Median 1940-44	Week ended—		Median 1940-44	Week ended—		Median 1940-44
	Feb. 10, 1945	Feb. 12, 1944		Feb. 10, 1945	Feb. 12, 1944		Feb. 10, 1945	Feb. 12, 1944		Feb. 10, 1945	Feb. 12, 1944	
NEW ENGLAND												
Maine.....	1	0	0	49	23	19	0	0	0	2	0	0
New Hampshire.....	0	0	0	2	26	9	0	0	0	0	0	0
Vermont.....	0	0	0	11	17	9	0	0	0	0	0	0
Massachusetts.....	2	0	0	300	373	373	0	0	0	0	1	1
Rhode Island.....	0	0	0	36	25	12	0	0	0	0	0	0
Connecticut.....	1	1	0	66	66	59	0	0	0	0	0	0
MIDDLE ATLANTIC												
New York.....	10	1	1	560	761	473	0	0	0	2	1	5
New Jersey.....	0	0	0	140	224	224	0	0	0	2	1	0
Pennsylvania.....	1	0	0	443	419	367	0	0	0	17	6	6
EAST NORTH CENTRAL												
Ohio.....	2	0	0	418	259	285	0	0	0	0	3	1
Indiana.....	0	0	0	189	85	145	0	1	1	0	64	2
Illinois.....	2	0	0	415	316	316	0	1	1	2	1	1
Michigan ²	1	0	1	308	230	230	0	0	0	1	1	1
Wisconsin.....	0	0	1	192	295	208	0	0	0	0	1	0
WEST NORTH CENTRAL												
Minnesota.....	0	0	0	110	198	93	0	0	0	0	0	0
Iowa.....	0	0	2	75	167	70	0	1	1	0	1	0
Missouri.....	4	2	0	93	95	91	0	1	2	2	2	1
North Dakota.....	0	0	0	43	32	27	0	0	0	1	1	0
South Dakota.....	0	0	0	39	45	35	0	0	0	4	0	0
Nebraska.....	0	0	0	132	52	31	0	0	0	0	0	0
Kansas.....	0	1	0	110	95	84	0	0	0	0	0	0
SOUTH ATLANTIC												
Delaware.....	0	0	0	8	6	8	0	0	0	0	0	0
Maryland ³	0	0	0	222	192	82	0	0	0	2	6	0
District of Columbia.....	1	1	0	69	231	21	0	0	0	0	0	1
Virginia.....	1	0	0	173	75	46	0	0	0	0	1	1
West Virginia.....	0	2	0	63	35	37	0	0	0	1	2	0
North Carolina.....	2	0	0	71	48	48	0	0	0	1	1	2
South Carolina.....	0	0	0	14	5	6	0	0	0	0	1	1
Georgia.....	0	0	0	33	21	25	0	0	0	1	4	3
Florida.....	0	0	0	11	22	11	0	1	0	1	0	0
EAST SOUTH CENTRAL												
Kentucky.....	1	0	0	54	83	83	0	0	0	0	0	1
Tennessee.....	0	2	1	83	53	53	1	1	0	1	0	0
Alabama.....	1	1	1	20	22	22	0	0	0	4	1	1
Mississippi ²	2	0	0	71	10	5	0	1	1	1	2	1
WEST SOUTH CENTRAL												
Arkansas.....	0	0	0	39	4	6	0	0	2	0	1	2
Louisiana.....	0	1	0	18	7	6	0	0	0	3	8	3
Oklahoma.....	0	0	0	16	48	31	0	0	1	3	1	1
Texas.....	0	1	1	121	65	62	0	2	2	9	3	3
MOUNTAIN												
Montana.....	0	0	0	29	78	28	0	0	0	1	0	0
Idaho.....	0	0	0	56	54	18	0	0	0	1	0	0
Wyoming.....	0	0	0	2	5	8	1	0	0	0	0	0
Colorado.....	1	0	0	78	72	37	0	0	0	0	2	0
New Mexico.....	0	0	0	35	0	5	0	2	0	0	0	1
Arizona.....	1	0	0	47	21	13	0	0	0	0	0	0
Utah ²	1	0	0	63	120	57	0	0	0	0	0	0
Nevada.....	0	0	0	10	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	4	2	0	111	268	45	5	0	0	1	0	0
Oregon.....	0	1	0	37	90	18	0	0	0	3	0	0
California.....	4	2	2	383	365	140	0	0	0	1	0	4
Total.....	52	18	21	5,668	5,803	3,823	7	11	29	67	111	72
6 weeks.....	246	159	186	30,071	28,234	22,010	51	80	183	355	405	475

¹ Period ended earlier than Saturday.² Including paratyphoid fever reported separately, as follows: Maine, 1; New York, 1; Illinois 2.

Telegraphic morbidity reports from State health officers for the week ended February 10, 1945, and comparison with corresponding week of 1944 and 5-year median—Continued

Division and State	Whooping cough			Week ended Feb. 10, 1945							
	Week ended—		Median 1940- 44	Dysentery			En- cephalitis, infectious	Rocky Mt. spot- ted fever	Tula- remia	Ty- phus fever	Undu- lant fever
	Feb. 10, 1945	Feb. 12, 1944		Ame- bic	Bacil- lary	Un- speci- fied					
NEW ENGLAND											
Maine	27	14	37	0	0	0	0	0	0	0	1
New Hampshire	9	3	4	0	0	0	0	0	0	0	0
Vermont	28	31	31	0	0	0	0	0	0	0	4
Massachusetts	116	114	151	0	2	0	0	0	0	0	0
Rhode Island	20	5	13	0	0	0	0	0	0	0	0
Connecticut	52	23	52	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC											
New York	278	112	337	4	4	0	0	0	0	0	7
New Jersey	79	71	102	0	0	0	0	0	0	0	1
Pennsylvania	148	104	319	0	0	0	0	0	0	0	1
EAST NORTH CENTRAL											
Ohio	183	53	194	0	0	0	1	0	0	1	1
Indiana	9	8	24	0	0	0	0	0	1	0	1
Illinois	86	67	107	1	1	0	0	0	1	0	1
Michigan	96	106	175	0	3	0	0	0	0	0	3
Wisconsin	89	102	150	0	0	0	0	0	0	0	10
WEST NORTH CENTRAL											
Minnesota	22	31	53	3	0	0	1	0	0	0	1
Iowa	2	15	20	0	0	0	0	0	1	0	0
Missouri	14	13	20	0	0	0	0	0	2	0	1
North Dakota	2	5	13	0	0	0	0	0	0	0	0
South Dakota	7	0	8	0	0	0	0	0	0	0	0
Nebraska	2	4	10	0	0	0	1	0	0	0	0
Kansas	26	45	55	0	0	0	0	0	0	0	3
SOUTH ATLANTIC											
Delaware	2	0	1	0	0	0	0	0	0	0	0
Maryland	71	47	60	0	0	0	0	0	1	0	2
District of Columbia	10	6	15	0	0	0	0	0	0	0	0
Virginia	42	49	70	0	0	43	0	0	1	0	1
West Virginia	38	31	43	0	0	0	0	0	0	0	0
North Carolina	61	160	148	0	0	0	0	0	3	2	0
South Carolina	49	76	45	3	27	0	0	0	1	2	0
Georgia	9	14	24	1	27	0	0	0	2	8	2
Florida	3	12	16	8	1	0	1	0	0	13	2
EAST SOUTH CENTRAL											
Kentucky	42	50	50	0	0	0	0	0	0	0	1
Tennessee	24	33	41	0	0	1	0	0	1	0	0
Alabama	5	12	15	0	0	0	0	1	0	5	0
Mississippi				0	0	0	0	0	0	5	2
WEST SOUTH CENTRAL											
Arkansas	21	23	23	1	1	0	0	0	0	0	0
Louisiana	2	1	3	2	0	0	0	0	0	1	2
Oklahoma	10	16	16	1	1	0	0	0	0	0	0
Texas	231	181	181	6	467	7	0	0	0	6	12
MOUNTAIN											
Montana	28	12	12	0	0	0	0	0	0	0	0
Idaho	6	4	5	0	0	0	0	0	0	0	0
Wyoming	14	35	3	0	0	2	0	0	0	0	0
Colorado	40	35	35	0	1	0	0	0	0	0	0
New Mexico	6	3	22	2	0	0	0	0	0	0	0
Arizona	29	39	26	2	0	7	0	0	0	0	0
Utah	24	25	40	0	0	0	0	0	0	0	3
Nevada	0	2	1	0	0	0	0	0	0	0	0
PACIFIC											
Washington	21	42	42	0	0	0	0	0	0	0	0
Oregon	13	32	31	0	0	0	0	0	0	0	13
California	208	56	244	3	6	0	0	0	0	0	4
Total	2,304	1,922	3,670	37	541	60	4	1	14	43	79
Same week 1944	1,922			12	186	50	10	1	6	51	35
Average 1942-44	3,136			13	185	43	7	40	12	45	29
6 Weeks 1945	13,611			172	3,928	872	34	2	168	386	433
1944	11,045			129	1,385	320	54	1	71	299	219
Average 1942-44	19,990			112	927	256	48	43	119	4399	182

¹ Period ended earlier than Saturday.

⁴ 5-year median 1940-44.

Pitักษ.—Illinois, Lawrenceville, 1 case.

WEEKLY REPORTS FROM CITIES

City reports for week ended February 3, 1945

This table lists the reports from 88 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningoococcus, cases	Pneumonia deaths	Polio encephalitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Death								
NEW ENGLAND												
Maine:												
Portland	0	0			0	2	0	1	0	6	0	1
New Hampshire:												
Concord	0	0			0	0	0	0	0	4	0	0
Massachusetts:												
Boston	0	0			1	37	3	13	0	88	0	0
Fall River	0	0			0	0	0	2	0	0	0	0
Springfield	0	0			0	0	0	2	0	3	0	0
Worcester	0	0			0	1	0	4	0	7	0	0
Rhode Island:												
Providence	0	0	1	1	0	0	4	0	8	0	0	18
Connecticut:												
Bridgeport	0	0			0	1	2	0	0	1	0	3
Hartford	0	0			0	67	0	4	0	15	0	1
New Haven	0	0			0	0	1	1	0	5	0	0
MIDDLE ATLANTIC												
New York:												
Buffalo	0	0			0	1	1	7	0	15	0	0
New York	17	0	5	1	14	14	92	4	299	0	3	96
Rochester	0	1			0	4	3	2	0	1	0	35
Syracuse	0	0			0	0	0	0	0	1	0	26
New Jersey:												
Camden	0	0			0	0	0	1	0	3	0	0
Newark	0	0	3	0	4	0	5	0	29	0	0	4
Trenton	0	0			0	1	0	5	0	4	0	0
Pennsylvania:												
Philadelphia	0	0	1	1	2	1	26	1	105	0	15	41
Pittsburgh	0	0			0	0	7	15	0	12	0	9
Reading	0	0			0	0	0	3	1	1	0	0
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	1	0			0	0	3	8	0	8	0	7
Cleveland	0	0			2	2	6	17	0	60	0	21
Columbus	0	0	1	1	1	0	2	0	13	0	1	13
Indiana:												
Fort Wayne	0	0			0	0	0	4	0	16	0	0
Indianapolis	5	0			1	3	0	9	0	32	0	1
South Bend	0	0			0	1	0	0	0	4	0	2
Terre Haute	0	0			0	0	0	3	0	2	0	0
Illinois:												
Chicago	1	0	1	0	11	13	28	0	121	0	0	26
Springfield	0	0			8	0	2	1	12	0	0	6
Michigan:												
Detroit	12	0	2	0	2	5	14	0	112	0	2	20
Flint	1	0			0	0	4	0	12	0	0	1
Grand Rapids	0	0			0	2	0	0	3	0	0	0
Wisconsin:												
Kenosha	0	0			0	0	0	0	0	2	0	0
Milwaukee	0	0			4	0	3	0	45	0	0	13
Racine	0	0			5	0	0	0	5	0	0	6
Superior	0	0			2	0	0	0	2	0	0	2
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0			0	0	0	0	1	7	0	0
Minneapolis	1	0			1	2	1	7	0	16	0	10
St. Paul	0	0			0	1	0	3	0	13	0	10
Missouri:												
Kansas City	2	0			1	2	2	14	1	25	0	2
St. Joseph	0	0			0	3	0	0	0	22	0	1
North Dakota:												
Fargo	0	0			0	0	0	0	1	0	0	0
Nebraska:												
Omaha	1	1			0	4	1	6	0	23	0	0
Kansas:												
Topeka	1	0			0	1	0	5	0	8	0	2
Wichita	0	0			0	2	0	1	0	9	0	1

City reports for week ended February 3, 1945—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza	Measles cases	Meningitis, meningoococ- cous, cases	Pneumonia deaths	Poliomyelitis cases	Sorellet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	0	0		0	0	4	0	0	0	0	0
Maryland:											
Baltimore.....	6	0	2	0	9	13	0	72	0	0	38
Cumberland.....	0	0		0	0	1	0	1	0	0	0
Frederick.....	0	0		0	0	0	0	0	0	0	0
District of Columbia:											
Washington.....	0	0		0	6	3	10	85	0	1	1
Virginia:											
Lynchburg.....	0	0		1	0	1	1	4	0	0	0
Richmond.....	0	0	1	0	0	3	2	8	0	0	0
Roanoke.....	0	0		0	1	1	0	3	0	0	2
West Virginia:											
Charleston.....	0	0		0	0	0	0	1	0	0	0
Wheeling.....	0	0		14	0	2	0	3	0	0	0
North Carolina:											
Raleigh.....	0	0		0	0	0	1	0	0	0	8
Wilmington.....	1	0		1	1	0	2	0	1	0	5
Winston-Salem.....	0	0		0	1	0	2	8	0	0	0
South Carolina:											
Charleston.....	0	0	17	0	0	0	1	0	3	0	0
Georgia:											
Atlanta.....	0	0	4	0	0	0	6	0	9	0	1
Brunswick.....	0	0		0	0	0	4	0	2	0	0
Savannah.....	0	0	2	0	0	0	2	0	0	0	0
Florida:											
Tampa.....	0	0		0	2	0	3	0	0	0	0
EAST SOUTH CENTRAL											
Tennessee:											
Memphis.....	0	0	2	1	29	2	6	0	4	0	0
Nashville.....	0	0		0	0	1	4	0	6	0	0
Alabama:											
Birmingham.....	0	0	11	3	0	1	4	0	5	0	2
Mobile.....	1	0		0	0	0	0	0	0	0	0
WEST SOUTH CENTRAL											
Arkansas:											
Little Rock.....	0	0		0	0	0	1	0	0	0	3
Louisiana:											
New Orleans.....	3	0	4	4	9	3	9	0	9	0	1
Shreveport.....	1	0		5	0	0	0	0	0	0	0
Texas:											
Dallas.....	3	0	1	1	0	1	5	0	16	0	0
Galveston.....	0	0		0	0	0	1	0	1	0	0
Houston.....	4	0	1	0	0	2	4	0	2	0	0
San Antonio.....	4	0	3	2	1	0	5	0	7	0	1
MOUNTAIN											
Montana:											
Billings.....	0	0		0	1	0	1	0	2	0	0
Great Falls.....	0	0		0	1	0	2	0	2	0	1
Helena.....	0	0		0	0	0	0	0	0	0	0
Missoula.....	0	0		0	0	0	1	0	0	0	0
Idaho:											
Boise.....	1	0		0	0	0	1	0	3	0	3
Colorado:											
Denver.....	0	0	3	0	8	3	4	0	26	0	15
Pueblo.....	0	0		0	0	0	1	0	9	0	0
Utah:											
Salt Lake City.....	0	0		0	10	0	2	0	8	0	5

City reports for week ended February 3, 1945—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcal, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	0	0	0	0	10	1	10	0	17	0	1	0
Spokane	0	0	0	0	0	0	2	0	4	0	0	0
Tacoma	0	0	0	0	0	0	3	0	5	0	0	0
California:												
Los Angeles	7	0	10	1	23	0	4	2	53	0	1	11
Sacramento	3	0	0	0	3	0	1	0	7	0	0	13
San Francisco	4	0	3	1	61	2	10	0	56	0	0	15
Total	80	2	78	30	380	87	452	12	1,641	0	28	547
Corresponding week, 1944.	70	—	436	115	4,888	—	499	—	1,687	0	16	386
Average, 1940-44.	75	—	1475	166	3,430	—	522	—	1,305	3	14	917

¹ 3-year average, 1942-44.² 5-year median, 1940-44.

Anthrax.—Cases: Philadelphia, 1.

Dysentery, amebic.—Cases: Chicago, 1.

Dysentery, bacillary.—Cases: Buffalo, 2; New York, 3; Detroit 3; Charleston, S. C., 11; Los Angeles, 7.

Dysentery, unspecified.—Cases: Cincinnati, 26; San Antonio, 6.

Tularemia—Cases: Chicago 2.

Typhus fever, endemic.—Cases: New York, 1; Savannah, 2; New Orleans, 1; Houston, 1; San Antonio, 2; Los Angeles, 1.

Rates (annual basis) per 100,000 population, by geographic groups, for the 88 cities in the preceding table (estimated population, 1943, 33,540,500)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcal, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	0.0	0.0	2.6	5.3	284	15.8	81.4	0.0	360	0.0	2.6	160
Middle Atlantic	7.9	0.5	4.2	0.9	12	12.0	72.2	2.8	218	0.0	8.3	98
East North Central	12.2	0.0	2.4	2.4	25	16.4	57.2	0.6	285	0.0	1.8	74
West North Central	14.7	2.9	0.0	5.9	44	11.7	105.6	8.8	361	0.0	0.0	76
South Atlantic	11.4	0.0	42.5	3.3	56	13.1	88.3	0.0	327	0.0	1.6	90
East South Central	5.9	0.0	76.7	23.6	171	23.6	82.6	0.0	89	0.0	11.8	24
West South Central	4.3	0.0	25.8	34.4	29	17.2	71.7	0.0	100	0.0	2.9	14
Mountain	7.9	0.0	23.8	0.0	159	23.8	95.3	0.0	397	0.0	0.0	191
Pacific	22.1	0.0	20.6	3.2	153	4.7	47.4	3.2	225	0.0	3.2	62
Total	12.5	0.3	12.2	4.7	59	13.6	70.5	1.9	256	0.0	4.4	85

March 2, 1945

TERRITORIES AND POSSESSIONS

Puerto Rico

Notifiable diseases—4 weeks ended January 27, 1945.—During the 4 weeks ended January 27, 1945, cases of certain notifiable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Bilharziasis	4	Ophthalmia neonatorum	2
Chickenpox	14	Puerperal fever	1
Diphtheria	47	Ringworm disease	1
Dysentery, unspecified	3	Syphilis	412
Filariasis	1	Tetanus	16
Gonorrhea	516	Tuberculosis (all forms)	564
Influenza	106	Typhoid fever	19
Leprosy	1	Typhus fever (murine)	3
Malaria	815	Undulant fever	2
Measles	177	Whooping cough	116

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended January 20, 1945.—During the week ended January 20, 1945, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		6	1	235	417	76	29	56	115	935
Diphtheria		6	1	43	2	7	2	1		62
Encephalitis, infectious								1		1
German measles		3		9	13	2	6	11	20	64
Influenza		6			120	3			21	150
Measles			7	201	80	7	55	9	166	325
Meningitis, meningococcal								3		4
Mumps					368	184	18	20	74	692
Scarlet fever		3		10	102	99	15	8	55	320
Tuberculosis (all forms)				1	117	37	6		7	151
Typhoid and para-typhoid fever				1	7				3	12
Undulant fever					4	1				5
Venereal diseases:										
Gonorrhea		1	34	41	82	176	19	19	32	446
Syphilis		1	12	36	121	77	8	15	6	299
Whooping cough		18		72	146	114	15	5	9	412

NEW ZEALAND

Notifiable diseases—4 weeks ended December 30, 1944.—During the 4 weeks ended December 30, 1944, certain notifiable diseases were reported in New Zealand as follows:

Disease	Cases	Deaths	Disease		Cases	Deaths
Actinomycosis	1		Puerperal fever		9	
Cerebrospinal meningitis	10	1	Scarlet fever		546	1
Diphtheria	55	2	Tetanus		1	
Dysentery, bacillary	1		Trachoma		1	
Erysipelas	13	1	Tuberculosis (all forms)		113	48
Food poisoning	3		Typhoid fever		10	1
Lead poisoning	1		Undulant fever		3	
Malaria	27					

SWEDEN

Notifiable diseases—November 1944.—During the month of November 1944, cases of certain notifiable diseases were reported in Sweden as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	7	Poliomyelitis	351
Diphtheria	541	Scarlet fever	2,461
Dysentery, epidemic	217	Syphilis	123
Gonorrhea	1,522	Typhoid fever	5
Hepatitis, epidemic	786	Undulant fever	6
Paratyphoid fever	24	Weil's disease	30

**REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND
YELLOW FEVER RECEIVED DURING THE CURRENT WEEK**

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the **PUBLIC HEALTH REPORTS** for the last Friday in each month.

(Few reports are available from the invaded countries of Europe and other nations in war zones.)

Plague

Algeria.—Plague has been reported in Algeria as follows: Algiers—January 1-10, 1945, 2 cases; January 11-20, 1945, 2 cases; Oran—January 11-20, 1945, 1 case.

Iraq—Amara Province.—For the period February 1-5, 1945, 4 fatal cases of plague were reported in Amara Province, Iraq.

Peru.—During the month of December 1944, plague was reported in Peru by Departments as follows: Ancash, 3 cases; 2 deaths; Libertad, 3 cases, 1 death; Lima, 2 cases, 2 deaths.

Morocco (French).—For the period January 11-20, 1945, 12 cases of plague were reported in French Morocco.

Senegal.—Plague has been reported in Senegal as follows: December 1-10, 1944, 14 cases, 11 deaths; January 11-20, 1945, 24 cases.

Tunisia—Ferryville.—For the period December 21-31, 1944, 2 cases of plague were reported in Ferryville, Tunisia.

Smallpox

Algeria.—For the period January 11-20, 1945, 19 cases of smallpox were reported in Algeria.

Bolivia.—For the month of December 1944, 67 cases of smallpox with 27 deaths were reported in Bolivia. Departments reporting the highest incidence of the disease are as follows: Potosi, 31 cases, 13 deaths; La Paz, 23 cases, 9 deaths; Oruro, 7 cases, 1 death; Chuquisaca, 3 cases, 3 deaths; Tarija, 2 cases; Santa Cruz, 1 case, 1 death.

Cameroon (French).—For the period January 11-20, 1945, 26 cases of smallpox were reported in French Cameroon.

Mexico—Jalisco State.—Smallpox has been reported in Jalisco State, Mexico, as follows: October 1944, 45 cases; November 1944, 238 cases; December 1944, 41 cases; January 1945, 13 cases. Localities reporting the highest incidence are Cocula, Crucero Santa Maria, and Estipac.

Typhus Fever

Algeria.—Typhus fever has been reported in Algeria as follows: December 21-31, 1944, 95 cases; January 1-10, 1945, 18 cases; January 11-20, 1945, 34 cases.

Bolivia.—For the month of December 1944, 25 cases of typhus fever with 9 deaths were reported in Bolivia. Departments reporting the

highest incidence of the disease are as follows: La Paz, 11 cases, 4 deaths; Potosi, 9 cases, 3 deaths; Oruro, 4 cases, 2 deaths.

Egypt.—For the week ended December 30, 1944, 272 cases of typhus fever with 23 deaths were reported in Egypt.

Libya—Tripolitania.—For the month of December 1944, 4 cases of typhus fever were reported in Tripolitania, Libya.

Morocco (French).—For the period January 11-20, 1945, 98 cases of typhus fever were reported in French Morocco.

Tunisia.—For the period December 21-31, 1944, 5 cases of typhus fever were reported in Tunisia.

Turkey.—For the week ended February 3, 1945, 81 cases of typhus fever were reported in Turkey.

X

FEDERAL SECURITY AGENCY
UNITED STATES PUBLIC HEALTH SERVICE
THOMAS PARRAN, *Surgeon General*
DIVISION OF PUBLIC HEALTH METHODS
G. ST. J. PERRON, *Chief of Division*

The PUBLIC HEALTH REPORTS, first published in 1878 under authority of an act of Congress of April 29 of that year, is issued weekly by the United States Public Health Service through the Division of Public Health Methods, pursuant to the following authority of law: United States Code, title 42, sections 241, 245, 247; title 44, section 220.

It contains (1) current information regarding the prevalence and geographic distribution of communicable diseases in the United States, insofar as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other important communicable diseases throughout the world; (2) articles relating to the cause, prevention, and control of disease; (3) other pertinent information regarding sanitation and the conservation of the public health.

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